VAX CONFIGURATION UTILITY (IVV000)

USER'S GUIDE

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Section 1
GENERAL DESCRIPTION

1.1 INTRODUCTION

This manual is designed to serve as a guide for those using the Emulex VAX configuration utility, IVV000, on Digital Equipment Corporation (DEC) VAX-11 and VAX-8600 computers. IVV000 is designed to run under the Emulex VAX Monitor, EVM, and the Emulex VAX 8600 Monitor, EVM 8600.

This diagnostic autosizer program is designed for use by qualified installers of Emulex equipment, and thus it assumes that the user has some knowledge of hardware configurations, VAX architecture and terminology, and interpretation of error messages and device register contents.

This document contains two main sections:

Section 1	General Description: This section contains an overview of IVV000, including its functions, distribution media, hardware and software compatibility, and related documentation.
Section 2	Operation: Describes operation of IVV000, including load and start procedures and sample dialog.

1.2 PRODUCT OVERVIEW

The purpose of the IVV000 diagnostic is to print a map of all populated and unpopulated input/output devices, so that the operator can determine the hardware configuration of the system.

1.3 DISTRIBUTION MEDIA

The following table lists and describes distribution media for IVV000 and other Emulex VAX and MicroVAX diagnostic software.

Emulex P/N	Description
VX9960405	TU58 cassette for VAX-11/750
VX9960505	Eight-inch floppy diskette for VAX-11/780
VX9960910	9-track mag tape for VAX-8600
VX9960704	5.25-inch floppy diskette for MicroVAX

1.4 COMPATIBILITY

1.4.1 HARDWARE

IVV000 is an autosizer for all VAX buses. It is compatible with DEC VAX 11/730, 11/750, 11/780, and 8600, and MicroVAX I and II computers.

1.4.2 SOFTWARE

IVV000 is designed to run with the Emulex VAX diagnostic monitor, EVM, with EVM 8600, and with the Emulex MicroVAX diagnostic monitor, MicroEVM. For information regarding these diagnostic monitors, see the user's guides referenced in subsection 1.5.

1.5 RELATED DOCUMENTATION

Title: Emulex VAX Monitor (EVM) User's Guide
Publication Number: VX9950901
Publisher: Emulex Corporation
3545 Harbor Blvd.
Costa Mesa, CA 92626
(714) 662-5600 TWX 910-595-2521

Title: Emulex VAX-8600 Monitor (EVM 8600) User's Guide
Publication Number: VX9950924
Publisher: Emulex Corporation
3545 Harbor Blvd.
Costa Mesa, CA 92626
(714) 662-5600 TWX 910-595-2521

Section 2
OPERATION

2.1 OVERVIEW

This section describes IVV000 load and start procedures, and explains sample program output.

User input appears in **bold** type, in order to distinguish it from IVV000 or EVM output. The symbol **<return>** represents the carriage return key.

2.2 LOAD AND START PROCEDURES

The procedure used to invoke EVM varies from one VAX system to another. For a description of EVM bootstrapping procedures, see the EVM user's guide (reference given in subsection 1.5).

After the EVM> prompt has appeared on the screen, you can obtain information regarding EVM commands by typing:

```
EVM>HELP<return>
```

To load and start IVV000, type the following. (The default filename extension is .EXE.)

```
EVM>LOAD IVV000<return>
EVM>START<return>
```

The START command may be abbreviated **ST.** Because IVV000 is an autosizer, it requires no SET CONFIGURATION statement in order to run.

2.3 SAMPLE OUTPUT

For definitions of technical terms and acronyms used in this subsection, please refer to the VAX Hardware Handbook (reference given in subsection 1.5).

Statements that appear on the right-hand side of the page, preceded by exclamation points, are explanatory comments rather than IVV000 output. They are provided here in order to clarify the significance of the output. In subsection 2.3.2, for example, note that there is only one attention summary (AS) register for all eight possible devices. Thus the device 0 AS register responds for drives 2 through 7, even though the devices do not exist.

IVV000 sample output is shown only for VAX-11 systems. Output for MicroVAX systems is similar in appearance.

2.3.1 VAX-11/730

The sample output presented in this subsection refers to a VAX-11/730 with the following configuration:

- One UDA50 disk drive at address 772150_8
- One DMF32 communications multiplexer at address 760340_8
- One TU80 tape drive at address 772520_8

```
EVM>LOAD IVV000<return>
EVM>START<return>

Emulex Config Utility  REV 1.0  dd-mmm-yyyy Time

TEST # 1  Configuration Utility
  dd-mmm-yyyy Time


--------------CONFIG--------------

CPU ID = 00000003, VAX-11/730

*** UBA0:
*** UBA_BASE_ADR = 00FC0000
Unpopulated .... 00760000 - 00760336
Populated ...... 00760340 - 00760376
Unpopulated .... 00760400 - 00772146
Populated ...... 00772150 - 00772152
Unpopulated .... 00772154 - 00772516
Populated ...... 00772520 - 00772522
Unpopulated .... 00772524 - 00777776

-----------------------------------

SUMMARY REPORT:
  TOTAL # ERRORS = 0 (0 SYSTEM, 0 DEVICE, 0 HARD, 0 SOFT)
  dd-mmm-yyyy Time
```

2.3.2 VAX-11/750

The sample output presented in this subsection refers to a VAX-11/750 with the following configuration:

- Two RH750 disk subsystems at addresses $F28000_{16}$ and $F2A000_{16}$
- One UNIBUS adapter at address $FC0000_{16}$
- Two DMF32 communications multiplexers at addresses 760340_8 and 760400_8
- One TU80 tape drive at address 772520_8

Sample Dialog

In the following sample output, the address range $00F28400_{16}$ through $00F284FC_{16}$ represents address space for 32 external registers for each device, 0 and 1, from byte offset 400-4FC. Similarly, the address range $00F2A400_{16}$ through $00F2A47C_{16}$ represents space for 32 external registers for device 0 in this sample configuration. Even though space for 32 external registers is available to the firmware for each device, the actual valid address range used for registers is device dependent, as described in each controller technical manual. Any attempt to access a register outside the range specified for a given device causes the illegal register bit to be set in the error register.

```
     EVM>LOAD IVV000<return>
     EVM>START<return>

Emulex Config Utility   REV 1.0   dd-mmm-yyyy Time

TEST # 1  Configuration Utility
  dd-mmm-yyyy Time

--------------CONFIG--------------

CPU ID = 00000002, VAX-11/750

*** UBA0:
*** UBA_BASE_ADR = 00FC0000
Unpopulated .... 00760000 - 00760336
Populated ...... 00760340 - 00760436
Unpopulated .... 00760440 - 00772516
Populated ...... 00772520 - 00772522
Unpopulated .... 00772524 - 00777776

*** MBA0:
*** MBA_BASE_ADR = 00F28000
Populated ...... 00F28400 - 00F284FC          ! All drive 0 and 1
Unpopulated .... 00F28500 - 00F2850C            registers respond
Populated ...... 00F28510 - 00F28510          ! Drive 2 AS register
Unpopulated .... 00F28514 - 00F2858C
Populated ...... 00F28590 - 00F28590          ! Drive 3 AS register
Unpopulated .... 00F28594 - 00F2860C
Populated ...... 00F28610 - 00F28610          ! Drive 4 AS register
Unpopulated .... 00F28614 - 00F2868C
Populated ...... 00F28690 - 00F28690          ! Drive 5 AS register
Unpopulated .... 00F28694 - 00F2870C
Populated ...... 00F28710 - 00F28710          ! Drive 6 AS register
Unpopulated .... 00F28714 - 00F2878C
Populated ...... 00F28790 - 00F28790          ! Drive 7 AS register
Unpopulated .... 00F28794 - 00F287FC
```

```
*** MBA1:
*** MBA_BASE_ADR = 00F2A000
Populated ...... 00F2A400 - 00F2A47C          ! All drive 0 registers
Unpopulated .... 00F2A480 - 00F2A7FC            respond
```

2.3.3 VAX-11/780

The sample output given below refers to a VAX-11/780 with the following configuration:

- One memory controller (TR 1)
- One UNIBUS adapter (TR 3) at address 20100000_{16}
- One DMF32 communications multiplexer at address 760340_{8}
- One TS11 tape subsystem at address 772520_{8}
- Two RH780 disk subsystems (TR 8 and TR 9) at addresses 20010000_{16} and 20012000_{16} respectively

```
EVM>LOAD IVV000<return>
EVM>START<return>

Emulex Config Utility  REV 1.0  dd-mmm-yyyy Time

TEST # 1  Configuration Utility
  dd-mmm-yyyy Time

--------------CONFIG--------------

CPU ID = 00000001, VAX-11/780

TR = 1

NEXUS other than UBA/MBA; TR = 1

TR = 3

*** UBA0:
*** UBA_BASE_ADR = 20100000
Unpopulated .... 00760000 - 00760336
Populated ...... 00760340 - 00760376
Unpopulated .... 00760400 - 00772516
Populated ...... 00772520 - 00772522
Unpopulated .... 00772524 - 00777776

TR = 8

*** MBA0:
*** MBA_BASE_ADR = 20010000
Populated ...... 20010400 - 2001047C          ! All drive 0 registers
Unpopulated .... 20010480 - 2001048C            respond
Populated ...... 20010490 - 20010490          ! Drive 1 AS register
Unpopulated .... 20010494 - 2001050C
```

Sample Dialog

```
Populated ..... 20010510 - 20010510          ! Drive 2 AS register
Unpopulated .... 20010514 - 2001058C
Populated ..... 20010590 - 20010590          ! Drive 3 AS register
Unpopulated .... 20010594 - 2001060C
Populated ..... 20010610 - 20010610          ! Drive 4 AS register
Unpopulated .... 20010614 - 2001068C
Populated ..... 20010690 - 20010690          ! Drive 5 AS register
Unpopulated .... 20010694 - 2001070C
Populated ..... 20010710 - 20010710          ! Drive 6 AS register
Unpopulated .... 20010714 - 2001078C
Populated ..... 20010790 - 20010790          ! Drive 7 AS register
Unpopulated .... 20010794 - 200107FC

TR = 9

*** MBA1:
*** MBA_BASE_ADR = 20012000
Populated ..... 20012400 - 2001247C          ! All drive 0 registers
Unpopulated .... 20012480 - 2001248C            respond
Populated ..... 20012490 - 20012490          ! Drive 1 AS register
Unpopulated .... 20012494 - 2001250C
Populated ..... 20012510 - 20012510          ! Drive 2 AS register
Unpopulated .... 20012514 - 2001258C
Populated ..... 20012590 - 20012590          ! Drive 3 AS register
Unpopulated .... 20012594 - 2001260C
Populated ..... 20012610 - 20012610          ! Drive 4 AS register
Unpopulated .... 20012614 - 2001268C
Populated ..... 20012690 - 20012690          ! Drive 5 AS register
Unpopulated .... 20012694 - 2001270C
Populated ..... 20012710 - 20012710          ! Drive 6 AS register
Unpopulated .... 20012714 - 2001278C
Populated ..... 20012790 - 20012790          ! Drive 7 AS register
Unpopulated .... 20012794 - 200127FC

-------------------------------------

SUMMARY REPORT:
  TOTAL # ERRORS = 0 (0 SYSTEM, 0 DEVICE, 0 HARD, 0 SOFT)
  dd-mmm-yyyy Time
```

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